



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/727,743	12/01/2000	Michael R. Gorman	54465USA4B.018	4855

32692 7590 02/18/2003

3M INNOVATIVE PROPERTIES COMPANY
PO BOX 33427
ST. PAUL, MN 55133-3427

EXAMINER

EASHOO, MARK

ART UNIT	PAPER NUMBER
----------	--------------

1732

4

DATE MAILED: 02/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/727,743

Applicant(s)

GORMAN ET AL.

Examiner

Mark Eashoo, Ph.D.

Art Unit

1732

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-57 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-57 is/are rejected.
- 7) ☒ Claim(s) 23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement filed 01-MAR-2003 complies with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609. Accordingly, it has been placed in the application file and the information referred to therein has been considered as to the merits.

Specification

Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

The abstract of the disclosure is objected to because the abstract does not include a brief discussion of the process. Correction is required. See MPEP § 608.01(b).

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: -- Forming Structured Surfaces with a Helically Wound Tool Roll --.

The disclosure is objected to because of the following informalities: The priority or related application information on page 1, line 1 is incorrect because application 09/259,781 has been allowed.

Appropriate correction is required.

Claim Objections

Claim 23 is objected to because of the following informalities: Claim 23 does not end with a period . Appropriate correction is required.

Claims 12-13 and 41-42 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Each of the claims have limitations which are directed to only apparatus structure which fail to further limit the process. Apparatus limitations are given little patentable weight in method claims. *Stalego v. Heymes et al.*, 120 USPQ 473. In this instance, the claimed structure does not appear to change or add to the process from the claim which claims 12 and 13 depend.

Claim Rejections - 35 USC § 112

Claims 12-13 and 41-42 are rejected under 35 USC § 112, fourth paragraph, as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Each of the claims have limitations which are directed to only apparatus structure which fail to further limit the process. Apparatus limitations are given little patentable weight in method claims. *Stalego v. Heymes et al.*, 120 USPQ 473. In this instance, the claimed structure does not appear to change or add to the process from the claim which claims 12 and 13 depend.

Claims 52-57 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 52 recites the limitation "the first wire". There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1 and 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rochlis (US Pat. 3,541,216) in view of Granitsas (US Pat. 2,793,585).

Regarding claim 1: Rochlis teaches the basic claimed process of making an embossed sheet, comprising : providing a tool roll having a structured surface (Figs. 1-12); extruding a molten thermoplastic onto the outer surface of the tool roll to form a structured surface on a film formed thereon (Fig. 11); and removing the structured film from the tool roll (Fig. 11).

Rochlis does not teach a tool roll comprising a cylindrical base roll helically wound with wire(s) forming a structured surface. However, Granitsas teaches a tool roll comprising a cylindrical base roll helically wound with wire(s) forming a structured surface (Figs 1-6). Rochlis and Granitsas are combinable because they are from the same field of endeavor, namely, embossing. At the time of invention a person of ordinary skill in the art would have found it obvious to have used a tool roll comprising a cylindrical base roll helically wound with wire(s) forming a structured surface, as taught by

Granitsas, in the process of Rochlis, since Granitsas suggests that such tool roll provides an economic benefit (1:42-44).

Regarding claim 6: Granitsas further teaches a wire having a varying cross-section along its length (Figs. 1 and 3-6). Granitsas would have been combined with Rochlis for the same reasons as set forth above.

Regarding claims 7 and 9: Granitsas further teaches a second or spacing wire having a height less than an adjacent wire (Figs. 15). It is inherent that the spacing wire would provide grooves and form a series of continuous ridge structures. Granitsas would have been combined with Rochlis for the same reasons as set forth above.

Regarding claim 8: Rochlis does not teach a second or spacing wire having a height less than an adjacent wire forming a discontinuous ridge structure. However, Granitsas further teaches a second or spacing wire having a height less than an adjacent wire (Figs. 15). Rochlis also suggests that notches may be given unique shapes to form unique contours (4:12-22). Rochlis further teaches that adjacent disks may have different contours (Fig. 6). At the time of invention a person of ordinary skill in the art would have found it obvious to have used a tool roll comprising a cylindrical base roll helically wound with wires forming a structured surface each wire having a different contour, as taught by Granitsas, in the process of Rochlis, since Granitsas suggests that such tool roll provides an economic benefit (1:42-44). Since each wire would have a different contour, it is inherent that ridges would be formed in at least two different discontinuous patterns.

Claims 2-5, 10-11, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rochlis (US Pat. 3,541,216) in view of Granitsas (US Pat. 2,793,585) as applied to claims 1 and 6-9 above, and further in view of Murasaki et al. (US Pat. 5,393,475) when taken with Rochlis (US Pat. 3,312,583).

Rochlis and Granitsas teach the basic claimed process as set forth above.

Regarding claims 2-3: Rochlis teaches extruding a material between a nip formed by two rolls, since the material path travels between elements 129 and 116. Nonetheless, if Rochlis does not teach extruding into a nip formed between two tool rolls, then Murasaki et al. teaches extruding into a nip formed between two tool rolls (Fig. 1). Rochlis and Murasaki et al. are combinable because they are concerned with a similar technical difficulty, namely, forming a structured surface on a sheet/film. At the time of

invention a person of ordinary skill in the art would have found it obvious to have extruded a material into a nip formed between two tool rolls, as taught by Murasaki et al., in the process of Rochlis, since Murasaki et al. suggests that a sheet having structure/texture on both sides is a desired product.

Regarding claim 4: Rochlis teaches a vacuum (ie. vented) applied to the tool roll (3:53-75 and 4:35-38).

Regarding claim 5: Rochlis does not teach a heated tool roll. Nonetheless, Rochlis '583 teaches a heated tool roll (12:7075). At the time of invention a person of ordinary skill in the art would have found it obvious to have used a heated tool roll, as taught by Rochlis '583., in the process of Rochlis, since Rochlis '583 suggests that various feed materials may used if the tool roll is heated.

Regarding claims 10, 11 and 19-20: Rochlis (Figs. 1-12) and Granitsas (Figs. 3-6 and 14-15) both teaches a disk and wire, respectively, having a plurality of voids with substantially constant volume and/or depth. Granitsas would have been combined with Rochlis for the same reasons as set forth above regarding claim 1.

Regarding claims 14-18: Rochlis teaches numerous and various recess shapes (4:11-21) Rochlis refers to the shapes taught by Rochlis '583 (see Figs. 17, 21, and 22).

Regarding claims 21-23: Rochlis teaches at least one area of the tool roll free of cavities (Fig. 6, arc through elements 78 and 80). Fig. 6 also teach a longitudinal section along the line drawn through elements 76 and 80.

Regarding claims 24-29: Rochlis does not teach a second or spacing wire having a height less than an adjacent wire forming a discontinuous ridge structure. However, Granitsas further teaches a second or spacing wire having a height less than an adjacent wire and of substantially uniform cross-section(Figs. 15). Rochlis also suggests that notches may be given unique shapes to form unique contours (4:12-22). Rochlis further teaches that adjacent disks may have different contours (Fig. 6). At the time of invention a person of ordinary skill in the art would have found it obvious to have used a tool roll comprising a cylindrical base roll helically wound with wires forming a structured surface, each wire having a different contour, as taught by Granitsas, in the process of Rochlis, since Granitsas suggests that such tool roll provides an economic benefit (1:42-44).

Claims 30, 32-34, 43-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rochlis (US Pat. 3,312,538) in view of Miller et al. (US Pat. 5,679,302).

Regarding claims 30, 43-48: Rochlis teaches the basic claimed process of making a mechanical fastener (11:40-45), comprising : providing a tool roll having a structured surface (Figs. 1-8); extruding a molten thermoplastic onto the outer surface of the tool roll to form a structured surface on a film formed thereon (Fig. 19); and removing the structured film from the tool roll (Fig. 19). Rochlis also teaches numerous and various recess shapes (Figs. 17, 21, and 22), including rectilinear shapes (Figs. 10-13 and 21-22).

Rochlis does not teach modifying protrusions to form a fastener. However, Miller et al. teaches modifying protrusions to form a fastener (Fig. 6b). Rochlis '583 and Miller et al. are combinable because they are from the same field of endeavor, namely, forming mechanical fasteners. At the time of invention a person of ordinary skill in the art would have found it obvious to have modified protrusions to form a fastener, as taught by Miller et al., in the process of Rochlis '583, since Miller et al. suggest that such modifying produces an equivalent and alternative fastener product.

Regarding claim 32-34: Miller et al. teaches protrusions of various aspect ratios (4:24-56). Miller et al. would have been combined with Rochlis '583 for the same reasons as set forth above regarding claim 30.

Regarding claims 49-51: Rochlis '583 teaches at least one area of the tool roll free of cavities (Fig. 3a, arc through elements 36'). Fig. 3a also teach a longitudinal section along the line drawn through elements 34' and 36'.

Claims 35-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rochlis (US Pat. 3,312,583) in view of Miller et al. (US Pat. 5,679,302) as applied to claims 30, 32-34, 43-51 above, and further in view of Muraski et al. (US Pat. 5,393,475) and Rochlis (US Pat. 3,541,216).

Rochlis '583 and Miller et al. teach the basic claimed process.

Regarding claims 35-36: Rochlis '583 teaches extruding a material between a nip formed by two rolls, since the material path travels between elements 129 and 116. Nonetheless, if Rochlis does not teach extruding into a nip formed between two tool rolls, then Murasaki et al. teaches extruding into a nip formed between two tool rolls (Fig. 1). Rochlis '583 and Murasaki et al. are combinable because they are concerned with a similar technical difficulty, namely, forming a structured surface on a sheet/film. At the time of invention a person of ordinary skill in the art would have found it obvious to have extruded a material into a nip formed between two tool rolls, as taught by Murasaki et al., in the process of Rochlis '583, since Murasaki et al. suggests that a sheet having structure/texture on both sides is a desired product.

Regarding claim 37: Rochlis '583 does not teaches a vacuum (ie. vented) applied to the tool roll. However, Rochlis '216 teaches a vacuum (ie. vented) applied to the tool roll (3:53-75 and 4:35-38). At the time of invention a person of ordinary skill in the art would have found it obvious to have applied a vacuum or vented the tool roll, as taught by Rochlis '216, in the process of Rochlis '583, since Rochlis '216 suggest that such venting allows better flow of the material into the cavities by preventing entrapped air therein.

Regarding claim 38: Rochlis '583 teaches a heat mold/tool roll (12:70-75).

Claims 31, 39, 40 and 52-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rochlis (US Pat. 3,312,583) in view of Miller et al. (US Pat. 5,679,302) as applied to claims 30, 32-34, 43-51 above, and further in view of Granitsas (US Pat. 2,793,585).

Rochlis '583 and Miller et al. teach the basic claimed process.

Regarding claim 31: Rochlis '583 does not teach a tool roll comprising a cylindrical base roll helically wound with wire(s) forming a structured surface. However, Granitsas teaches a tool roll comprising a cylindrical base roll helically wound with wire(s) forming a structured surface (Figs 1-6). Rochlis '583 and Granitsas are combinable because they are from the same field of endeavor, namely, embossing. At the time of invention a person of ordinary skill in the art would have found it obvious to have used a tool roll comprising a cylindrical base roll helically wound with wire(s) forming a structured surface, as taught by Granitsas, in the process of Rochlis '583, since Granitsas suggests that such tool roll provides an economic benefit (1:42-44).

Regarding claim 39: Granitsas further teaches a wire having a varying cross-section along its length (Figs. 1 and 3-6). Granitsas would have been combined with Rochlis for the same reasons as set forth above.

Regarding claim 40: Rochlis (Figs. 1-12) and Granitsas (Figs. 3-6 and 14-15) both teaches a disk and wire, respectively, having a plurality of voids with substantially constant volume and/or depth. Granitsas would have been combined with Rochlis for the same reasons as set forth above regarding claim 31.

Regarding claim 52-57: Rochlis '583 does not teach a tool roll comprising a cylindrical base roll helically wound with wire(s) forming a structured surface. However, Granitsas teaches a tool roll comprising a cylindrical base roll helically wound with wire(s) forming a structured surface (Figs 1-6). Rochlis and

Granitsas are combinable because they are from the same field of endeavor, namely, embossing or forming structured surfaces on a sheet/web. At the time of invention a person of ordinary skill in the art would have found it obvious to have used a tool roll comprising a cylindrical base roll helically wound with wire(s) forming a structured surface, as taught by Granitsas, in the process of Rochlis '583, since Granitsas suggests that such tool roll provides an economic benefit (1:42-44).

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 1 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 21 of U.S. Patent No. 6,190,594 in view of Rochlis (US Pat. 3,541,216).

Claim 21 of U.S. Patent No. 6,190,594 teaches the basic claimed process of forming a structured surface on an article, comprising : a tool roll having a helically wound wire, the wire having a structured surface or cavities; and removing the structure from the tool roll.

Claim 21 of U.S. Patent No. 6,190,594 does not teach extruding a thermoplastic onto a tool roll having a structured surface. Nonetheless, Rochlis teaches extruding a thermoplastic onto a tool roll having a structured surface (Fig. 11). At the time of invention a person of ordinary skill in the art would have found it obvious to have extruded a thermoplastic onto a tool roll having a structured surface, as taught by Rochlis, in the process of claim 21 of U.S. Patent No. 6,190,594, since Rochlis suggests that a desired special texture may be formed upon a continuous sheet by extruding.

Paper No. 4, Non-Final - Art Unit: 1732

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Eashoo, Ph.D. whose telephone number is (703) 308-3606. The examiner can normally be reached on 7am-3pm, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (703) 308-3853. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Mark Eashoo, Ph.D.
Primary Examiner
Art Unit 1732

me
February 11, 2003

11 / Feb / 03